PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2002P00138 WO	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP 03/09827	International filing date *(day/month/year)* 04.09.2003	Priority date *(day/month/year)* 09.09.2002
International Patent Classification (IPC) or both national classification and IPC G06F17/30		
Applicant SAP AKTIENGESELLSCHAFT et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
23.02.2004	19.11.2004
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Huber, A Telephone No. +49 89 2399-2041

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/09827

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-17	as originally filed

Claims, Numbers

1-14	received on 30.09.2004 with letter of 29.09.2004

Drawings, Sheets

1/9, 3/9-9/9	as originally filed
2/9	received on 30.09.2004 with letter of 29.09.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-14
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-14
Industrial applicability (IA)	Yes:	Claims	1-14
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. The application does not meet the requirements of Article 6 PCT, because claims 1-14 are not clear.

The application seems to aim at providing a method, a computer system, a computer program product, a computer readable medium and a computer data signal for accessing data which is about to be archived.

The application therefore explains three concurrently running modules with concurrent software applications, and two locks (Figures 3, 4 and 5 and page 12 of the description). Said three modules are a selecting module, a writing module and a deleting module, whereby said selecting module and said writing module can be combined into one module. Any interference between said modules and said concurring software applications are prevented by the use of said two locks, i.e. the **T-lock** (Transactional lock) and the **P-lock** (Permanent lock), dealing with two separate tasks. The T-lock is represented in claim 1 by the second lock object, and the P-lock is represented by the first lock object (Source: page 10 line 30ff).

The **T-lock** blocks data objects for one transaction, i.e. one action to be performed, and thereby ensures that the concurrently running modules and the software applications do not interfere.

The **P-lock** blocks data objects for the purpose of archiving, preventing other software applications from accessing or modifying the data objects, i.e. the P-lock marks data objects for being archived (and tells the deleting module to delete said data object). Furthermore, the fact that an archive file is assigned to the P-lock defines that the data object is archived (Figure 8 & p.15 l.29 - p.16 l.18). Moreover, a software application, needing to modify a data object, can remove the P-lock as long as said data object is not yet archived (i.e. no archive file is yet assigned to the P-lock; from Figure 8).
It is understood from Figure 8 and from page 15 line 29 - p.16 l.18 of the description that the writing module assigns an archive file to the P-lock, and thereby it defines

that the data object is archived. Then no software application can modify said data object any more. If, however, a P-lock is set but no archive file is assigned to it (i.e. the selection module selected said data object for archiving, but said data object is not yet archived), then the software application can still modify the data object and delete it from the P-lock.

Hence, the P-lock is not a lock or semaphore as such but it is an archive table (or archive register). Identifiers of data objects are put in said P-lock/archive table (see Figure 2 of the application) to indicate that said data objects are to be archived or that they have already been archived.

Now, claim 1 is directed towards a method for controlling access to data objects by use of an archive table file (said P-lock), but claim 1 misses to explain how said archive table file looks like and how it serves to solve the application's aim. Moreover, features that are essential to the definition of the invention like the ones described above are not mentioned in claim 1. Thus, claim 1 does not meet the requirements following from Article 6 PCT that any independent claim must contain all the technical features essential to the definition of the invention.
Furthermore, claim 1 fails to release the second lock object (T-lock) (808).

Claim 2-10 are dependent on claim 1 and are consequently also not clear.

What has been said above with reference to claim 1 also applies to claims 11-14, mutatis mutandis.

2. The following documents (D) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:
   D1: STEFANI H.: "Datenarchivierung mit SAP" May 2002 (2002-05), SAP PRESS, GALILEO PRESS , BONN , XP002266517 ISBN: 3-89842-212-7
   D2: US-A-5 566 319 (LENZ NORBERT) 15 October 1996 (1996-10-15)
   D3: EP-A-0 499 422 (IBM) 19 August 1992 (1992-08-19)

3. The document D1, which seems to be the most pertinent prior art document available, discloses:
   a method for accessing in a computer system a data object having an identifier (ID)

(p.65 first paragraph),
checking, before accessing said data object, whether said ID is contained in a first lock object (p.64-65, checking the "Löschvormerkung" and the "Löschkennzeichen", and implicitly disclosed),
deleting the ID from the first lock object and performing a read and/or write access on said data object (applications may remove the "Löschvormerkung" , p.64 third paragraph - p.65 first paragraph, in particular p.65 first paragraph: "Setzen der Löschvormerkung ... bewirkt ... Daten nicht mehr änderbar"),
else skipping said deleting and accessing steps ("Löschkennzeichen" not removable, p.64 second paragraph).

Claim 1 differs from the teachings of D1 in that it stores the data object's ID in a second lock object (the T-lock) before checking (and maybe removing) the P-lock, and in that it checks whether a link to a storage location is assigned to said ID in said first lock object (the P-lock), and in case no link is assigned to said ID, deleting the ID from the first lock object.

Concerning the differences as to the T-lock, by means of these differences claim 1 appears to solve the objective technical problem of how to consistently work with the P-locks.
Now, it is notorious practise in the art to use transactional locks for blocking data objects when concurrently working modules try to access the same data objects in order to ensure data consistency in this parallel working environment. The second lock object (the T-lock) used in claim 1 blocks the data object in order to work on the data object, to check and delete the P-lock for said data object, in order to ensure that the concurrently running modules and the software applications do not interfere. Hence, this relates to the standard, commonplace, straight-forward use of transactional locks, and is a matter of normal design procedure. Its inclusion would therefore be an obvious design possibility for the skilled person in order to solve the problem posed.

Concerning the differences as to the assigned link in the P-lock, the following is noted:
The first lock object, the P-lock, is not a lock or semaphore as such, but it is a data objects/archive table (or data objects/archive register).

Identifiers of data objects are put in said P-lock/archive table (see Figure 2 of the application) to indicate that said data objects are to be archived, hence they are represented in D1 by the "Löschvormerkung".
The link to a storage location assigned to said ID in said P-lock/archive table indicates that the data objects have already been archived at said storage location. Consequently, the link indicates that the data objects may not be altered any more. The "Löschkennzeichen" of D1 does exactly the same, except that it does not indicate the storage location.
Consequently, by means of these differences claim 1 appears to solve the objective technical problem of how to avoid the use of two different locks and how to indicate the storage location.

To use a data objects/archive table, i.e. the "Löschvormerkung" with a link to the archive would be obvious for the skilled person, as this is a notorious and one of several straight-forward solutions from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed.
A related dedicated lock file is also disclosed in D2 (e.g. at the abstract), and also in D3 (p.3 l.7 and l.25-26).

Hence, the solution proposed in claim 1 of the present application does not involve an inventive step (Article 33(3) and Rules 64 and 65 PCT).

4. The features added by the dependent claims 2-10 are either known from D1 or form part of the general knowledge of the person skilled in the art. They do not appear to comprise anything which would go beyond the prior art to an extend that it could be considered as involving an inventive step.

5. What has been said above with reference to claims 1-10 also applies to claims 11-14, mutatis mutandis.

6. Final Remarks

6.1. The sentence on page 14 line 25-26 seems to be wrong and should be deleted.

6.2. The description on page 9 line 24 should say "In case said ID is contained" and not "In case said ID is not contained".

6.3. The vague generalising expression spirit in the description at page 17, line 24, brings into doubt the subject matter for which protection is actually sought, and should therefore be deleted.

6.4. The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT.

6.5. The summary of the invention should explicitly refer to the independent claims and mention their category.

6.6. International applications PCT/EP03/09833, PCT/EP03/09831, PCT/EP03/09830 and PCT/EP03/09832 are four co-pending international applications from the same applicant designating the same States and the claims of those applications have the same priority date and relate to the same invention (even though they may not necessarily claim that invention in identical terms). According to the PCT Guidelines Part III Chapter 11.10, it is noted to the applicant that each conflicting application might raise possible double patenting issues, as it is an accepted principle in most patent granting systems that two patents shall not be granted to the same applicant for one invention.

What is claimed is:

1. A method for accessing in a computer system a data object (201.x) having an identifier (ID), comprising:
storing the ID in a second lock object (204, 802,) and in case the storing has been performed successfully (803),
checking, before accessing said data object, whether said ID is contained in a first lock object (203, 804) and in case yes, whether a link to a storage location is assigned to said ID in said first lock object (203, 805), and in case no link is assigned to said ID, deleting the ID from the first lock object (806) and performing a read and/or write access on said data object (807), else, skipping said deleting (806) and accessing (807) steps.

2. The method of claim 1, wherein said first lock object (203) is a file stored on a nonvolatile storage means (107).

3. The method of claim 1 or 2,wherein said first lock object (203) comprises a table, having a column for the ID and a column for the link of the ID to a storage location.

4. The method of one of claims 1 to 3, wherein a data object (201.x) comprises one ore more fields of one or more tables (201, 202) and wherein the ID comprises one or more key fields of the one or more tables (201, 202).

5. The method of one of claims 1 to 4, wherein said link is a filename or a link to a file.

6. The method of one of claims 1 to 5, wherein said first lock object (203) is created by a data moving process.

7. The method one of claims 1 to 6, wherein the second lock object (204) is stored in a volatile storage means.

8. The method of one of claims 1 to 7, wherein said second lock object (204) is a data array.

9. The method of claim 8 ,wherein said data array is one dimensional.

10. The method of one of claims 1 to 9 for use in an enterprise resource planning software.

11. A computer system for processing data by means of or in a software application, comprising:
- memory for storing program instructions;
- input means for entering data;
- storage means for storing data;
- a processor responsive to program instructions;
- program instructions to carry out a method as of any of claims 1 to 10, if executed.

12. A computer readable medium comprising program code for performing a method as of any of claims 1 to 10 if said program code is executed on a computer system.

13. A computer program product comprising a computer readable medium according to claim 12.

14. A computer data signal embodied in a carrier wave comprising:
program code for performing a method as of any of

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claims 1 to 10 if said program code is executed on a computer system.

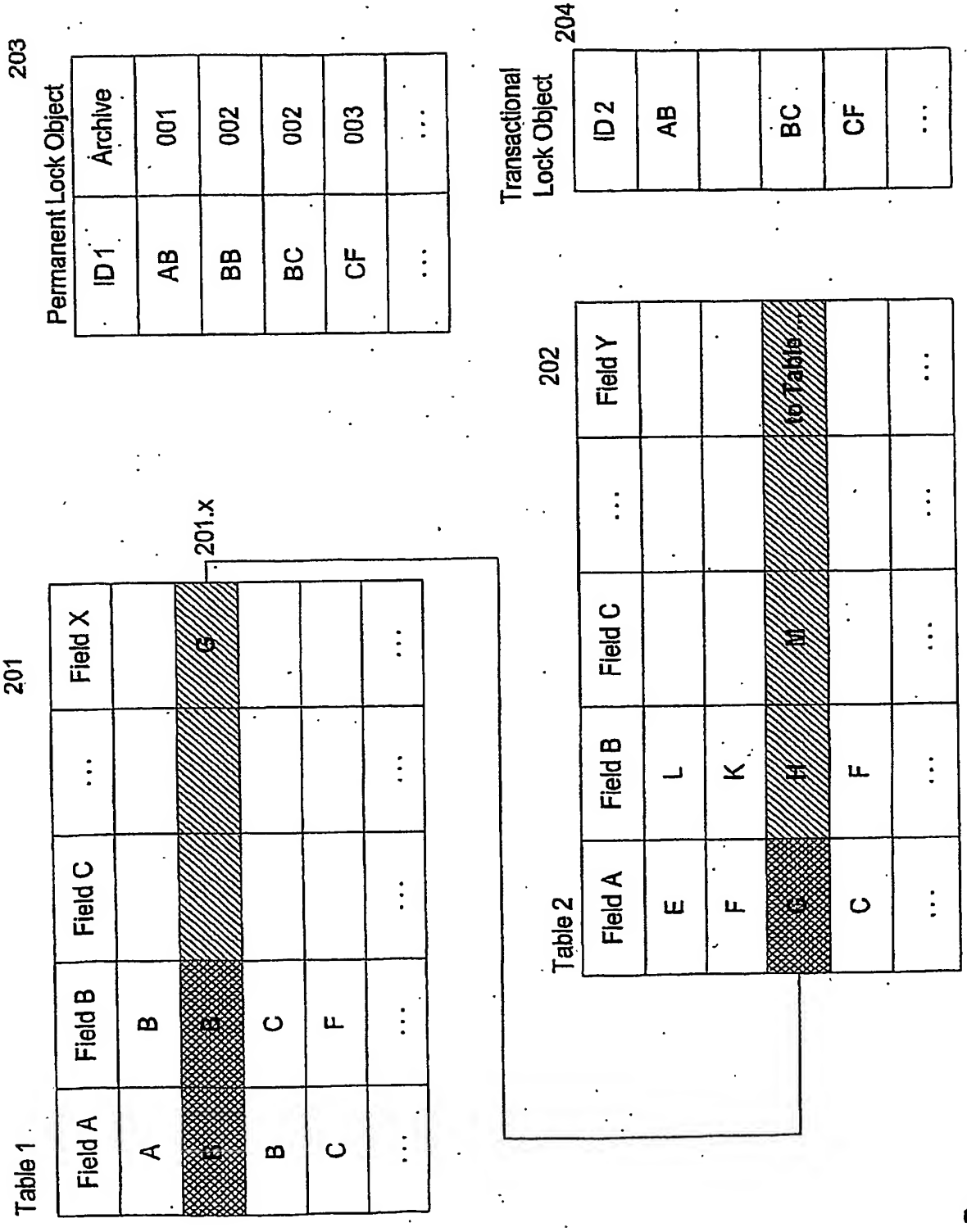

Fig. 2